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ABSTRACT

The view that geometry should be taught at every grade level is promoted. Primary and elementary school children are thought to rarely have any direct experience with geometry, except on an incidental basis. Children are supposed to be able to learn geometry rather easily, so long as the method and content are adapted to their development and learning style. Form drawing, a type of disciplined freehand geometry drawing designed by Rudolf Steiner (1861-1925), is promoted. Form drawing can be used to teach pupils to draw with great accuracy straight and curved lines, loops, circles, right, acute, and obtuse angles, and other semi-metric and metric forms and designs using pencil, pen and crayon. Examples of many form types are presented in a rough sequence of lesson tasks. One of the anticipated byproducts of the freehand drawing exercise is an improvement in the students' handwriting. Most pupils appear to look forward to and enjoy the form drawing. (MP)

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ARTISTIC APPROACH

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by

Earl J. Ogletree

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Geometry should be taught at every grade level in that it touches every aspect of life. It is an integral part of nature and art. In nature we find geometrical patterns in snowflakes, pine cones, and crystals. We find spirals in snail's shells, pentagons and hexagons in flowers and leaves. In art the artist weaves geometric patterns and structure, balance and harmony throughout his work. Geometry is the basis of science, architecture and the every day products we use. Although geometry is an integral part of life, children have little experience with it.

Primary and elementary school children rarely have any direct experience with geometry, except on an incidental basis through writing, drawing, playing with toys and geometric-shaped objects and what is touched on in arithmetic lessons.

Children can learn geometry rather easily, but the method and content must be adapted to their development and learning style. Children learn best by doing by means of "hands-on experiences", not by abstract experiences or presentations. They first have to experience that which they are to later understand and apply. For example, elementary school children are "doing beings." They conquer the world through movement while the adolescent does it through the intellect. Children are imitative and enjoy repetitive activities. Children are also naturally interested in drawing, painting, coloring and other artistic activities. Why not teach Geometry through an artistic approach? They can readily learn and experience geometric patterns and laws by drawing geometric forms and designs via an informal approach.

Form Drawing

Rudolf Steiner (1861-1925) developed a geometry program for the primary and elementary grades, called form drawing. Form drawing is a type of disciplined freehand geometry drawing in which children learn to draw with great accuracy straight lines, curved lines, loops, circles, and right, acute and obtuse angles and other semi-metric and metric forms and designs using pencil, pen and crayon.

On the following pages are the various types of forms or geometric patterns children can readily practice drawing. Children begin with the wavy or non-metric forms, and as they gain skill in drawing them with neatness and precision they proceed to the semi-metric and metric forms.

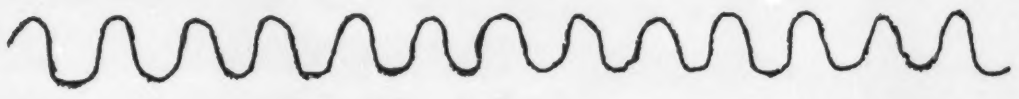
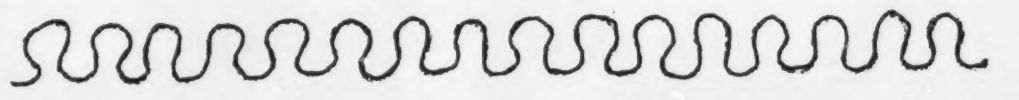
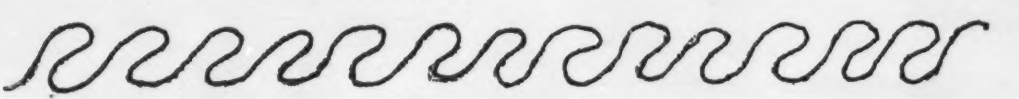
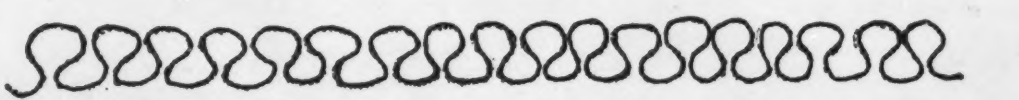
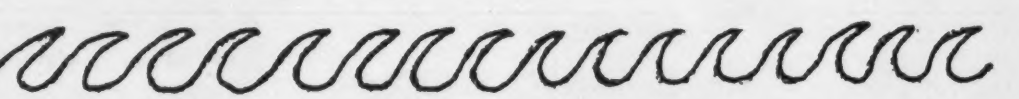
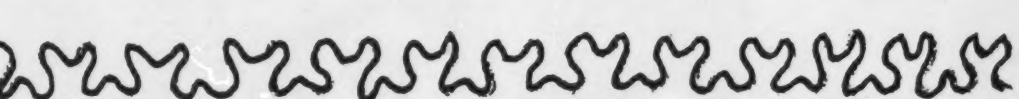
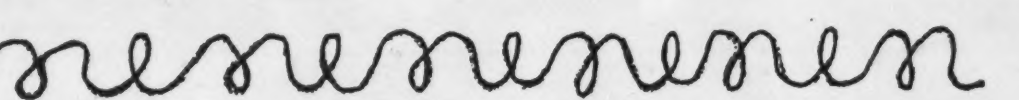
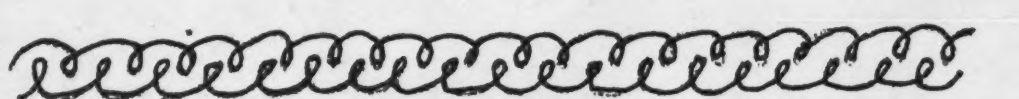
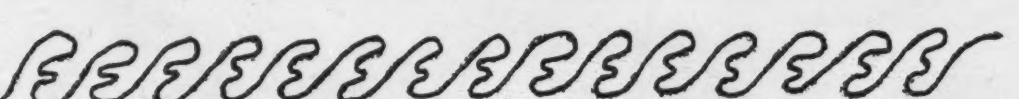
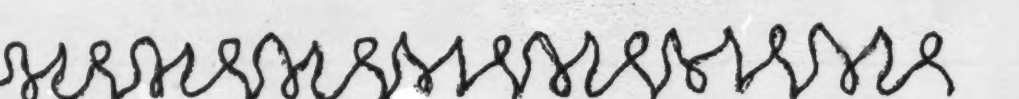
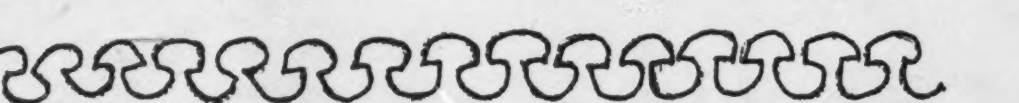
At the beginning the children can use lined paper, but as they become proficient they should use unlined paper. In the early grades, the children should use crayon, and as they become more skilled they should be encouraged to use a pencil, particularly colored pencils and pens.

The geometric form drawing has both a practical and therapeutic value. By practicing the forms the children become adept at drawing geometric figures accurately which helps them to develop neat and legible handwriting.

The following form drawing exercises can be practice through the fifth grade level. They should be encouraged to keep a notebook on geometry and to use the designs to decorate notebooks, to border and outline their papers and art projects.

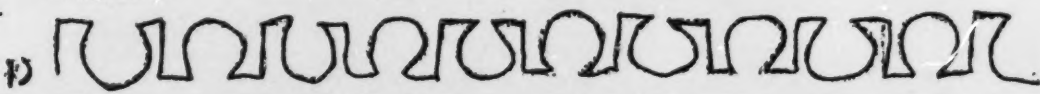
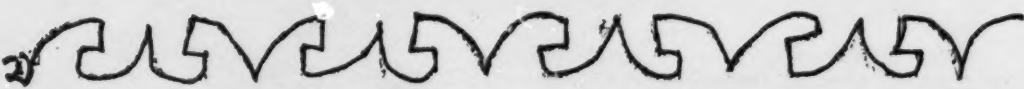
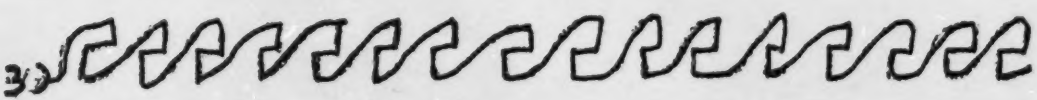
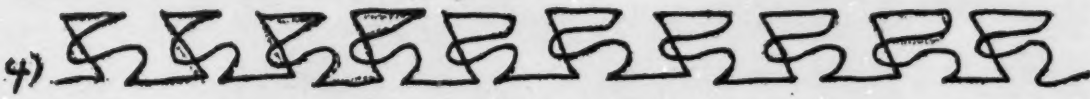
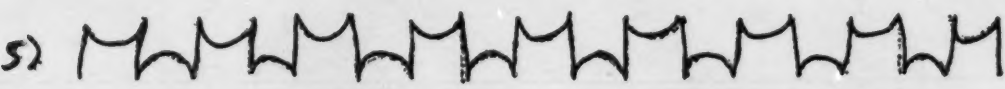
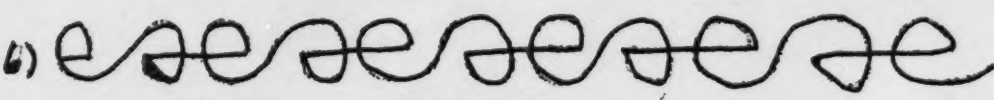
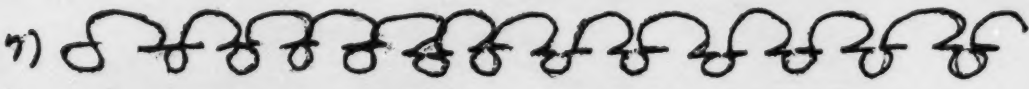
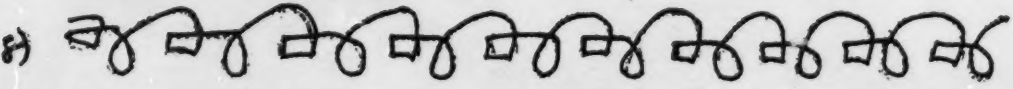
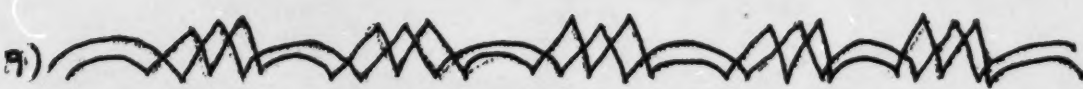
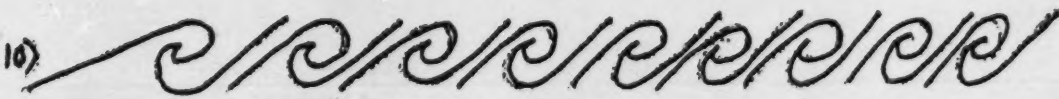
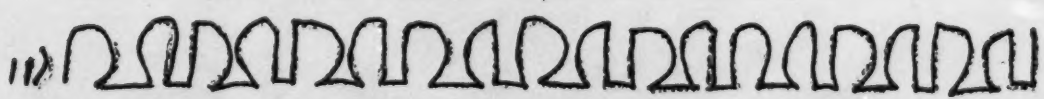
Non-Metric Forms

The teacher should begin with the non-metric forms by drawing each form on the board for the children to copy and practice. The children should not move on to the next form until they have accurately mastered the proceeding forms.

- 1) 
- 2) 
- 3) 
- 4) 
- 5) 
- 6) 
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- 11) 
- 12) 

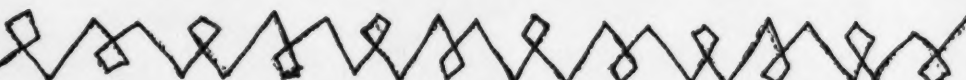
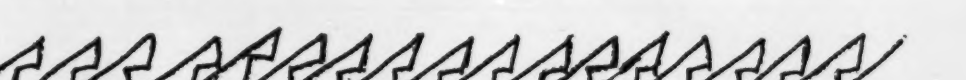
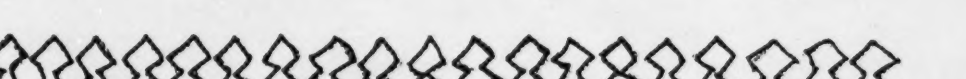
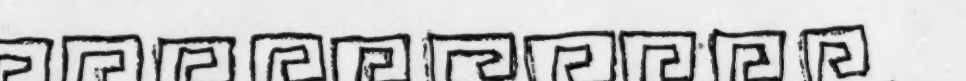
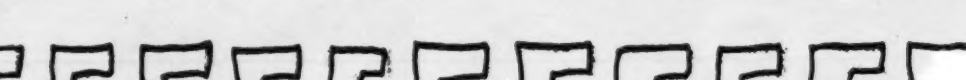
Semi-Metric Forms

The semi-metric forms or patterns are more difficult to draw than the non-metric forms. They require greater concentration and skill. Children should not be allowed to draw the more difficult forms until they have drawn the simpler forms with precision and neatness.

- 1) 
- 2) 
- 3) 
- 4) 
- 5) 
- 6) 
- 7) 
- 8) 
- 9) 
- 10) 
- 11) 

Metric Forms

These forms take the greatest amount of concentration and skill to execute accurately. The children should draw or practice these forms until they have mastered the semi-metric forms.

- 1) 
- 2) 
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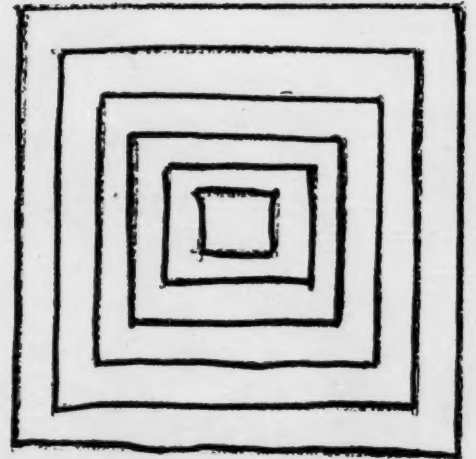
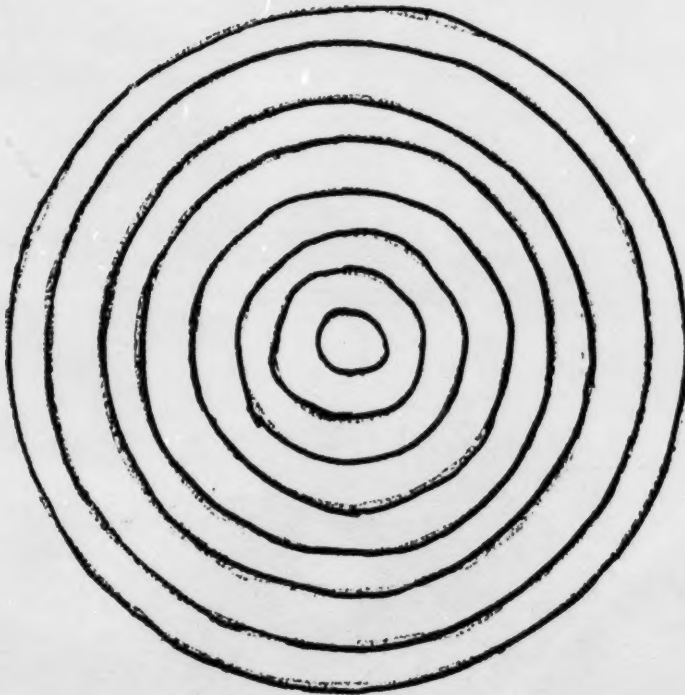
Geometric Forms on a Circle

After the children have mastered the form drawing patterns, they can draw them on the circumference of a circle or a square. The circle is first drawn lightly, freehand, covering the entire page; then the form is drawn around the circle. Then the children practice the forms without the guiding circle.



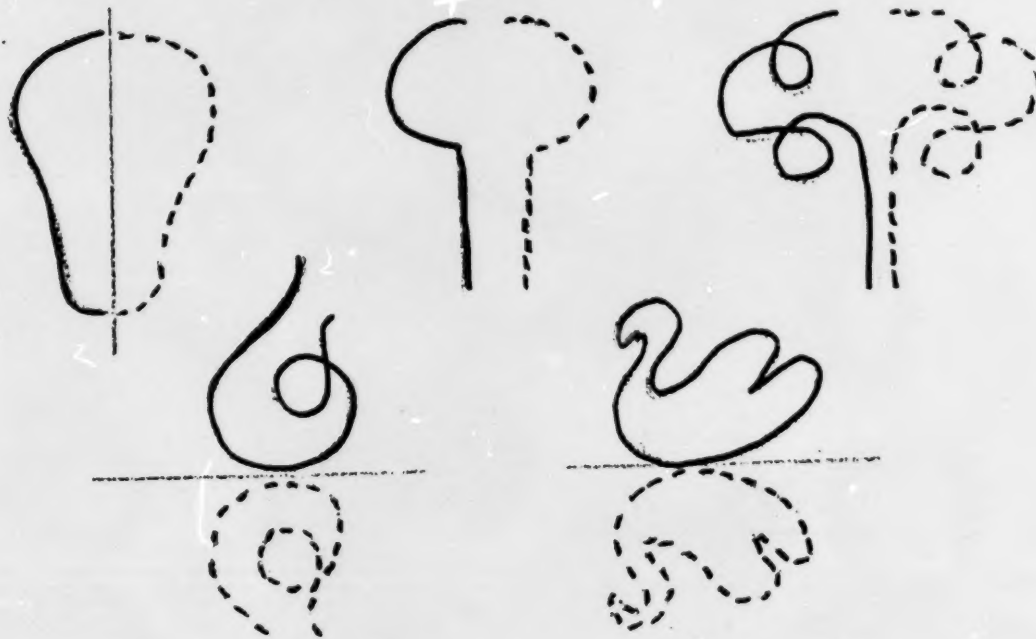
Concentric Circles and Forms

The children can learn the various geometric figures-- square, circle, pentagram, hexagon, triangle, etc. by drawing these figures in concentric forms. Children can begin from the center or the circumference of the figure.

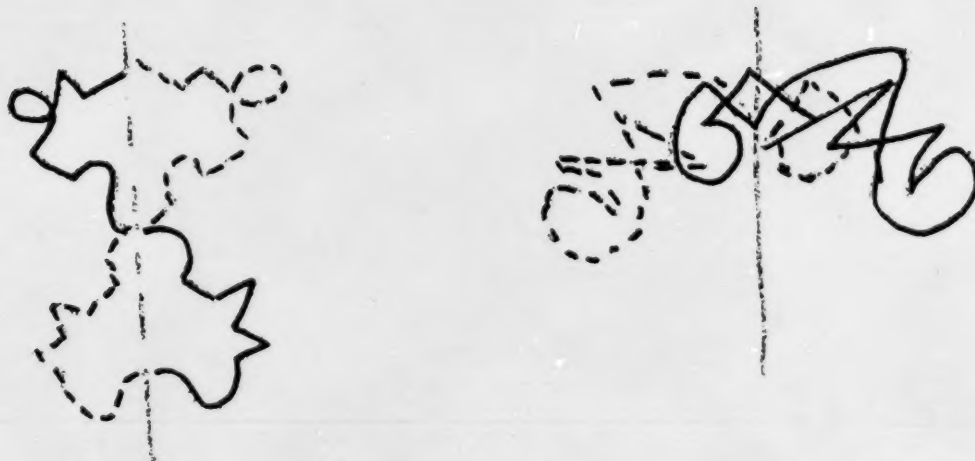


Symmetry or Mirror Drawings

These exercise help children to perceive the other or mirror half of the form the teacher draws on the board or a ditto sheet. Additional forms can be developed by the children and the teacher. This exercise makes the childrens' thinking mobile.



Double Symmetry or Mirror Exercises



As indicated the teacher can invent additional forms. However, what is important is the daily practice of the children in perfecting their skills in drawing the forms. My experience with working with children and observing teachers teaching children this freehand drawing is that the children not only look forward to the drawing exercises but enjoy doing them. Teachers have commented that the children's hand writing actually improved within several months to a year. Try it and see how you and your students enjoy the activity